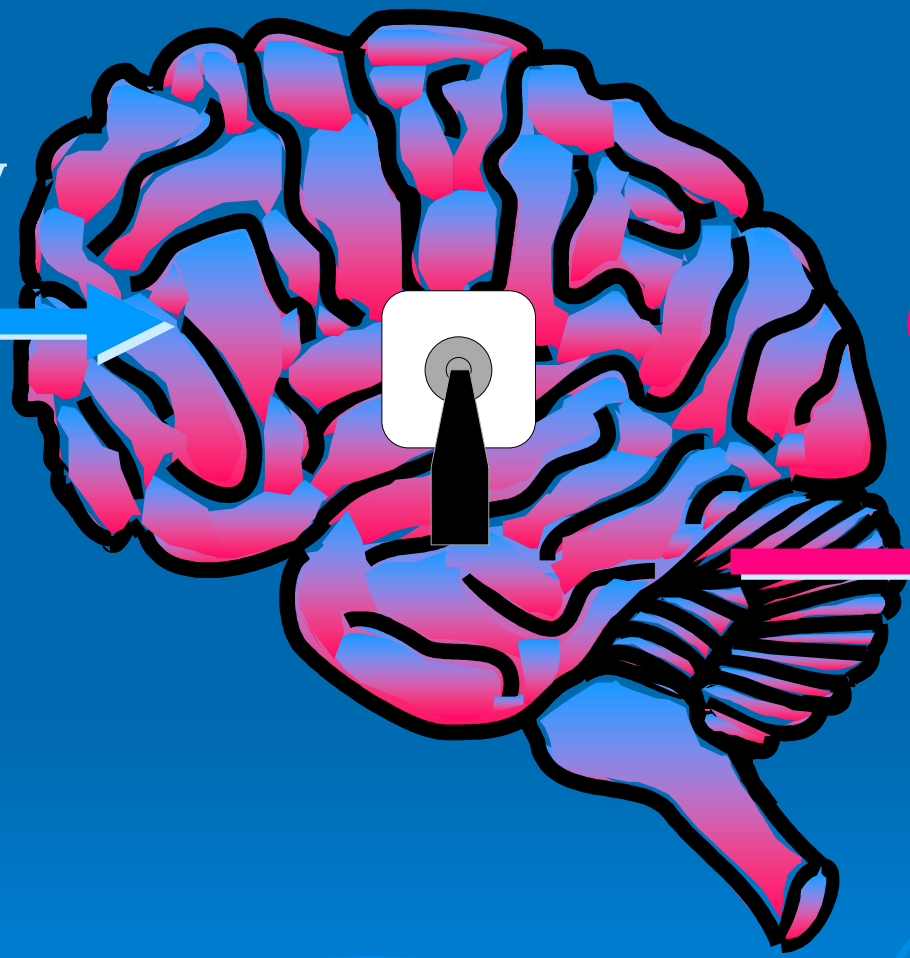
Prolonged Drug Use Changes the Brain In Fundamental and Long-Lasting Ways

Voluntary Drug Use



Compulsive Drug Use (Addiction)

Rumor-based policy?

A major demand that competes for scarce community resources are for the treatment needs of those who have become addicted to methamphetamine (MA).

Rumor based policy?

Critical questions facing policy makers and public health officials in areas with burgeoning MA use:

- How many people need treatment?
- What kind of treatment works for MA abuse/dependence?
- How much treatment is needed to successfully help MA users?

Rumor based policy?

A pervasive rumor has surfaced in many geographic areas with elevated MA problems:

- ✓ MA users are virtually untreatable with negligible recovery rates.
- ✓ Rates from 5% to less than 1% have been quoted in newspaper articles and reported in conferences.

The resulting conclusion is that spending money on treating MA users is futile and wasteful, BUT no data exists that supports these statistics

Statistics

During the 2002-2003 fiscal year:

- 35,947 individuals were admitted to treatment in California under the Substance Abuse and Crime Prevention Act funding.
- Of this group, 53% reported MA as their primary drug problem

Statistics

Analysis of:

- Drop out rates
- Retention in treatment rates
- Re-incarceration rates
- Other measures of outcome

All these measures indicate that MA users respond in an equivalent manner as individuals admitted for other drug abuse problems.

Does treatment work?

- Treatment programs and personnel are unprepared for the influx of MA users.
- Although some traditional elements may be appropriate, many staff report feeling unprepared to address many of the clinical challenges presented by these patients.

Clinical Challenges

- Poor treatment engagement rates
- High drop out rates
- Severe paranoia
- High relapse rates
- Ongoing episodes of psychosis
- Severe craving
- Protracted dysphoria
- Anhedonia

Treatment Options

CSAT Tip #33

- A useful resource that presents a review of the existing knowledge about treatment effectiveness with stimulant users.

- The following issues should be addressed by the clinical staff:
  - Meth and sexual behavior
  - Meth and weight gain
  - Meth and ongoing paranoia

Medications

- Currently, there are NO medications that can quickly and safely reverse life threatening MA overdose.

- There are NO medications that can reliably reduce paranoia and psychotic symptoms, that contribute to episodes of dangerous and violent behavior associated with MA use.

Psychosocial/Behavioral Treatments

- NIDA has also produced several manuals that have been empirically tested with stimulant-using populations, including:

  - Cognitive Behavioral Therapy (CBT)
  - Contingency Management (CM)

Psychosocial/Behavioral

- Materials were tested with cocaine and crack users, but there is evidence that cocaine and MA users respond similarly to behavioral and cognitive strategies.

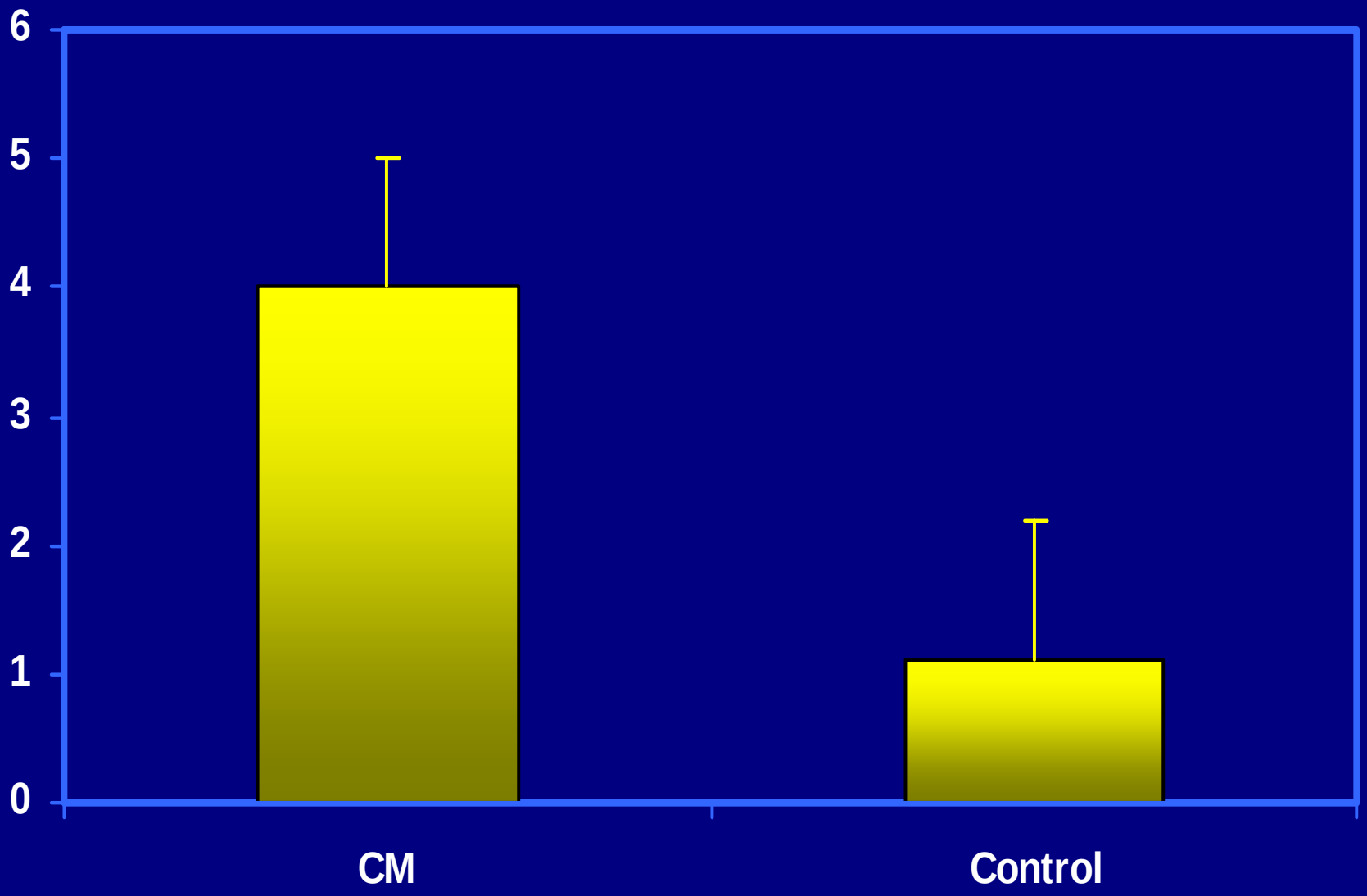
- Both CBT and CM produce substantial reduction of cocaine and virtually identical reduction in MA.

- Treatments with evidence of efficacy for treating cocaine appear to be equally effective with MA users.

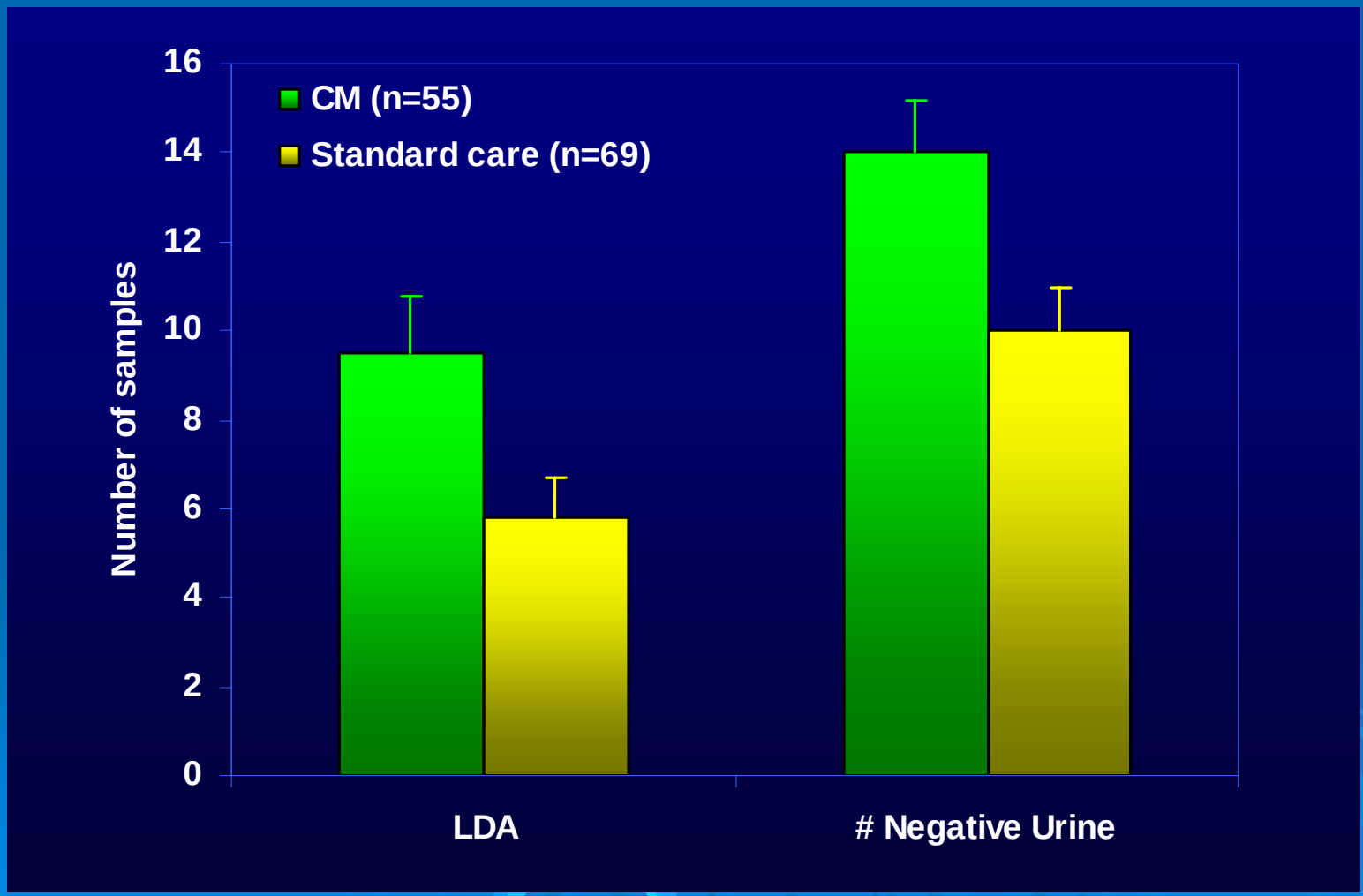
Contingency Management

- Preliminary finding appear very positive.
- Powerful tool to improve engagement and retention and to reduce MA use

Mean weeks of consecutive abstinence



Methamphetamine Outcomes from CTN 006



Matrix Model

- Is a manualized, 16-week, non-residential, psychosocial approach used for the treatment of drug dependence.

- Designed to integrate several interventions into a comprehensive approach. Elements include:
  - Individual counseling
  - Cognitive behavioral therapy
  - Motivational interviewing
  - Family education groups
  - Urine testing
  - Participation in 12-step programs

Matrix Model of Outpatient Treatment

Organizing Principles of Matrix Treatment

- Program components based upon scientific literature on promotion of behavior change.
- Program elements and schedule selected based on empirical support in literature and application.
- Program focus is on current behavior change in the present and not underlying “causes” or presumed “psychopathology”.
- Matrix “treatment” is a process of “coaching”, educating, supporting and reinforcing positive behavior change.

Matrix Model of Outpatient Treatment

Organizing Principles of Matrix Treatment

- Non-judgemental, non-confrontational relationship between therapist and patient creates positive bond which promotes program participation.
  - Therapist as a “coach”
- Positive reinforcement used extensively to promote treatment engagement and retention.
  - Verbal praise, group support and encouragement other incentives and reinforcers.

Matrix Model of Outpatient Treatment

Organizing Principles of Matrix Treatment

- Accurate, understandable, scientific information used to educate patient and family members
  - Effects of drugs and alcohol
  - Addiction as a “brain disease”
  - Critical issues in “recovering” from addiction

Matrix Model of Outpatient Treatment

Organizing Principles of Matrix Treatment

- Behavioral strategies used to promote cessation of drug use and behavior change
  - Scheduling time to create “structure”
  - Educating and reinforcing abstinence from all drugs and alcohol
  - Promoting and reinforcing participation in non-drug-related activities

Matrix Model of Outpatient Treatment

Organizing Principles of Matrix Treatment

- Cognitive-Behavioral strategies used to promote cessation of drug use and prevention of relapse.
  - Teaching the avoidance of “high risk” situations
  - Educating about “triggers” and “craving”
  - Training in “thought stopping” technique
  - Teaching about the “abstinence violation effect”
  - Reinforcing application of principles with verbal praise by therapist and peers

Matrix Model of Outpatient Treatment

Organizing Principles of Matrix Treatment

- Involvement of family members to support recovery.
- Encourage participation in self-help meetings
- Urine testing to monitor drug use and reinforce abstinence
- Social support activities to maintain abstinence

The Matrix Model

Monday	*Wednesday*	*Friday*
Early Recovery Skills **Weeks1-4**	**Family/education** **Weeks 1-12**	**Early Recovery Skills** **Weeks1-4**
Relapse Prevention **Weeks 1-16**	**Social Support** **Weeks 13-16**	**Relapse Prevention** **Weeks 1-16**

- **Urine or breath alcohol tests once per week, weeks 1-16**

Project Structure:

Study Sites

Billings, MT

San Mateo, CA (2)

Concord, CA

Honolulu, HI

San Diego, CA

Costa Mesa, CA

Hayward, CA

Coordinating Center

UCLA Integrated Substance Abuse Programs

Steering Committee

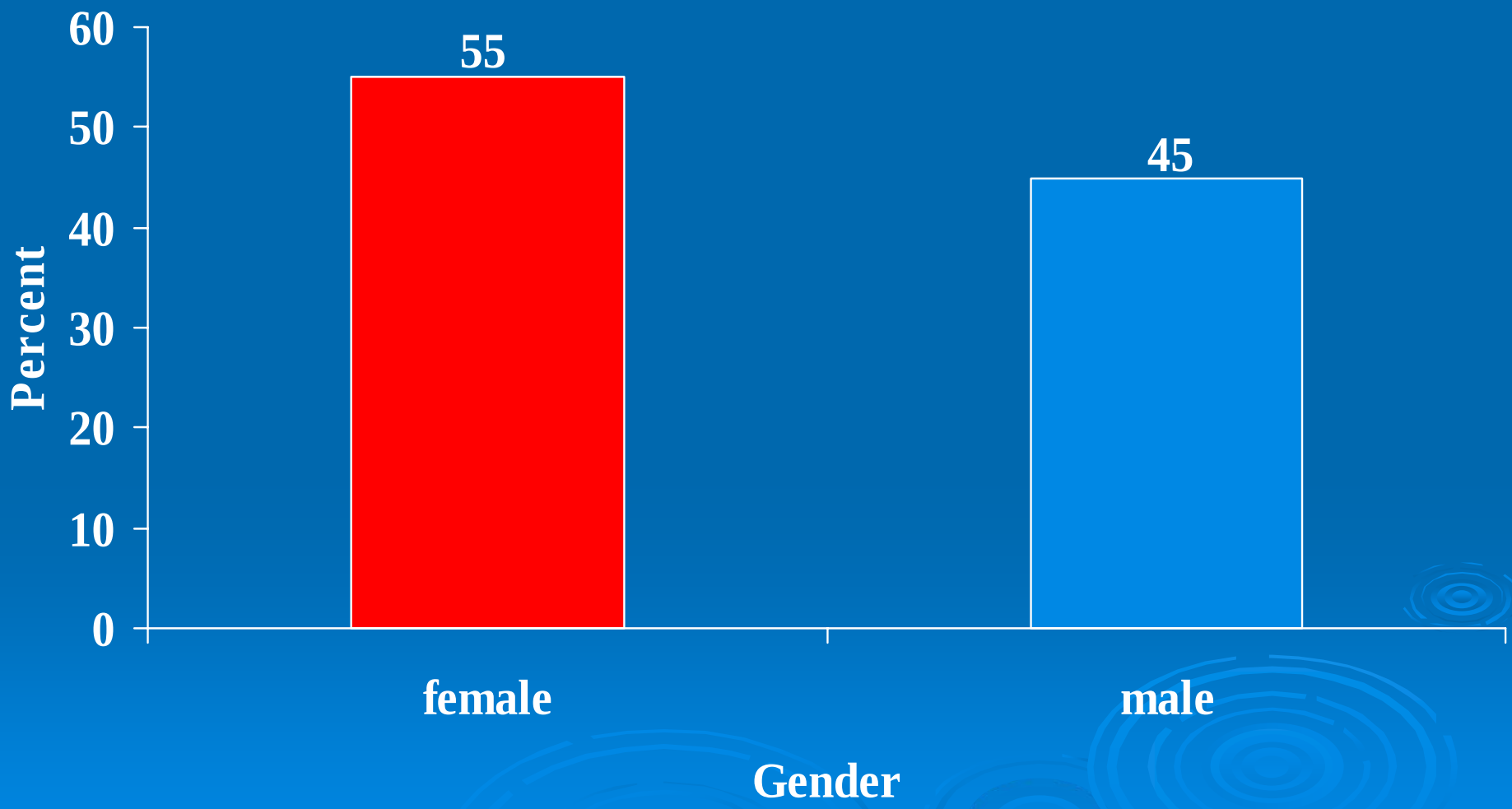
Scientific Advisory Board

Community Advisory Board

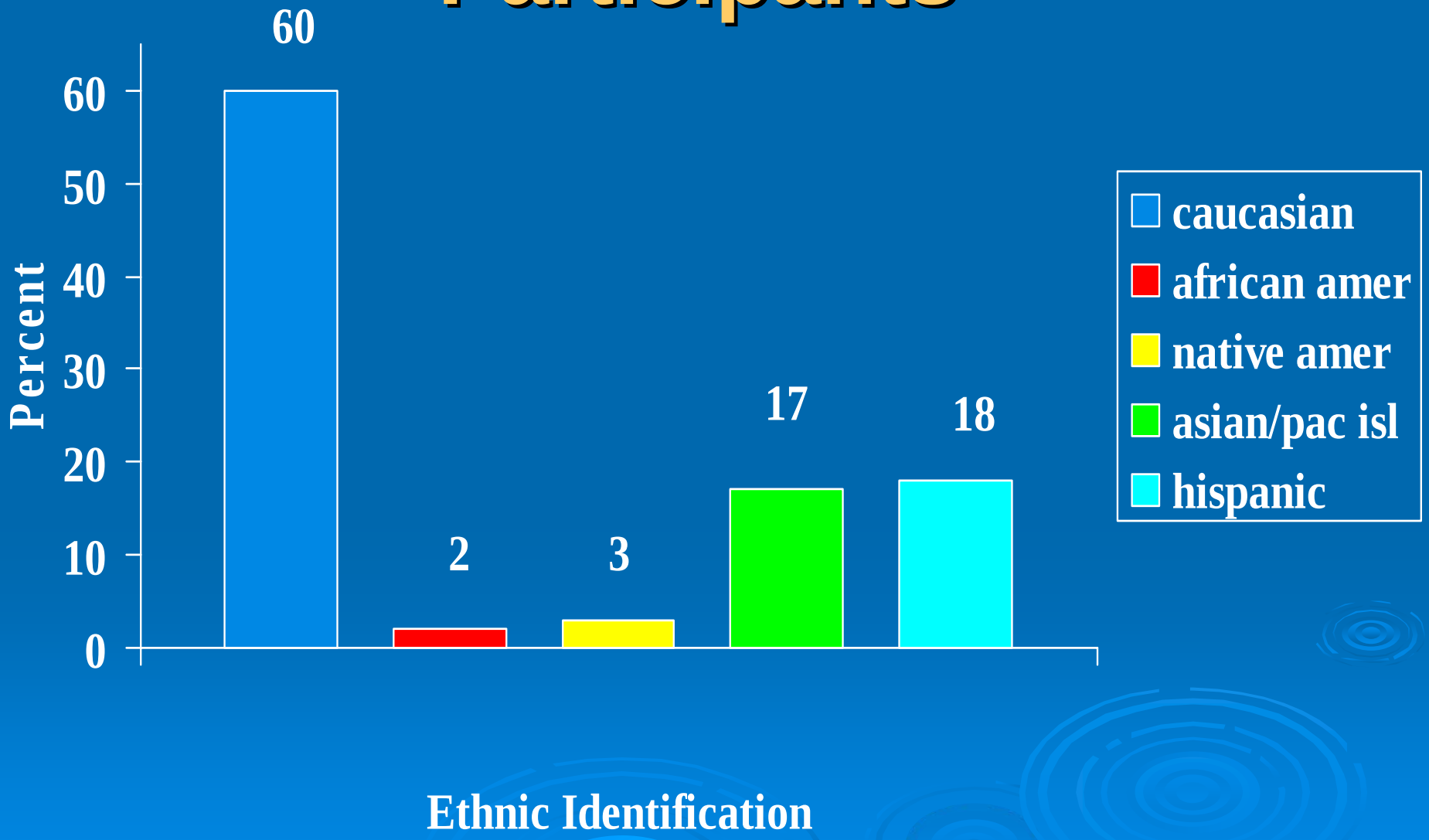
Baseline Demographics

Participants Served (n)	1016
Age (mean)	32.8 years
Education (mean)	12.2 years
Methamphetamine Use (mean)	7.5 years
Marijuana Use (mean)	7.2 years
Alcohol Use (mean)	7.6 years

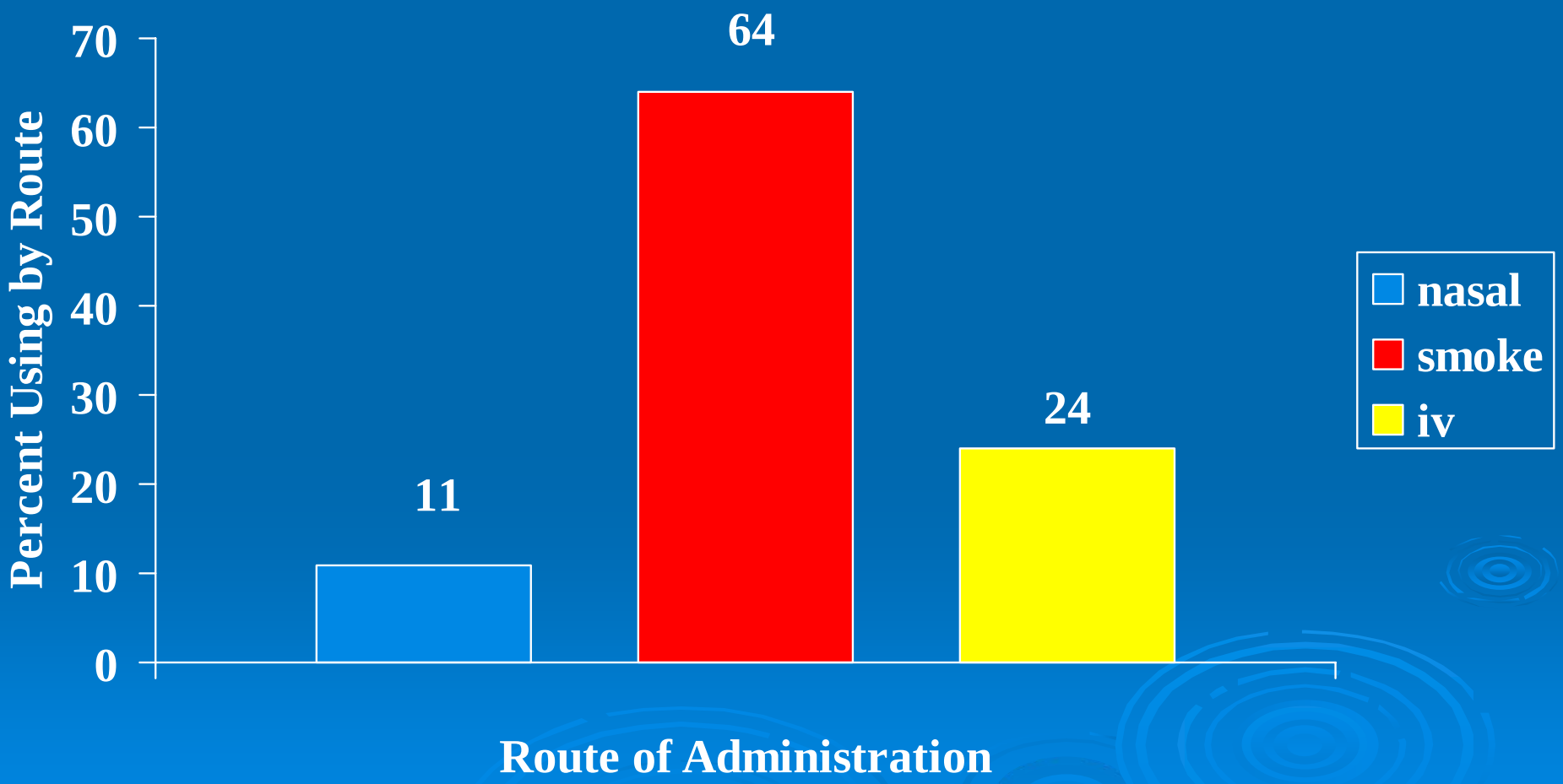
Gender Distribution of Participants



Ethnic Identification of Participants

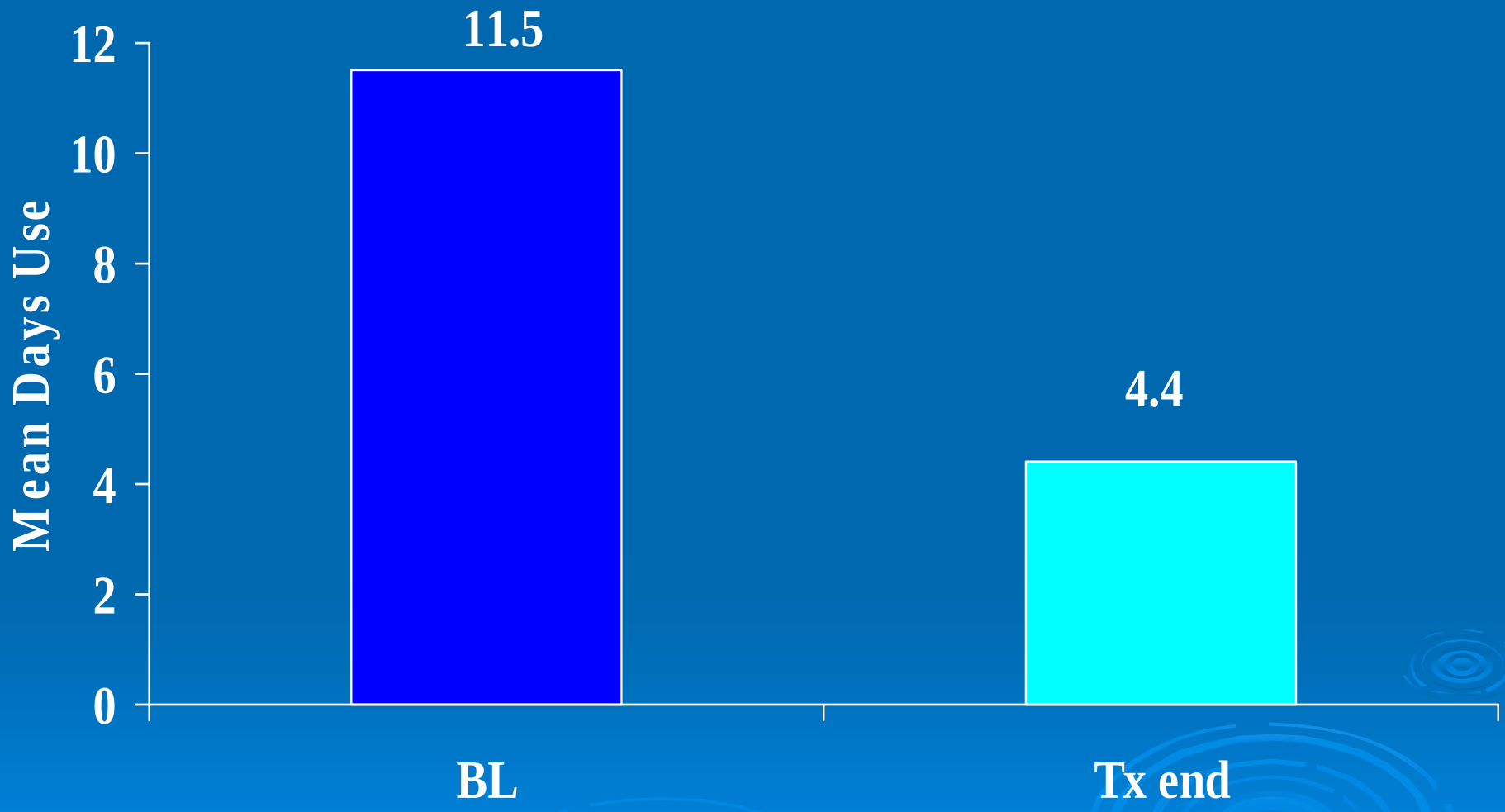


Route of Methamphetamine Administration



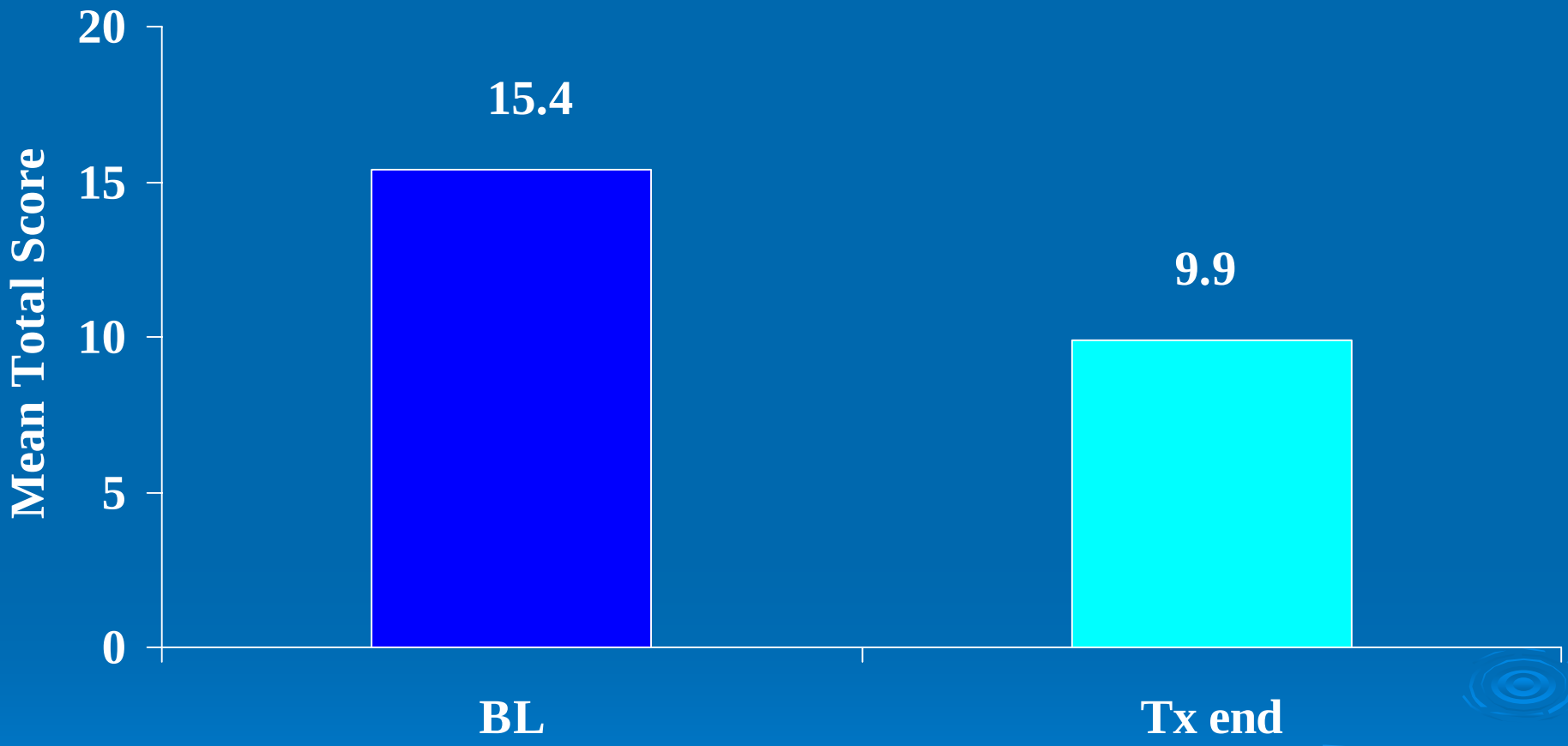
Changes from Baseline to Treatment-end

Days of Methamphetamine Use in Past 30 (ASI)



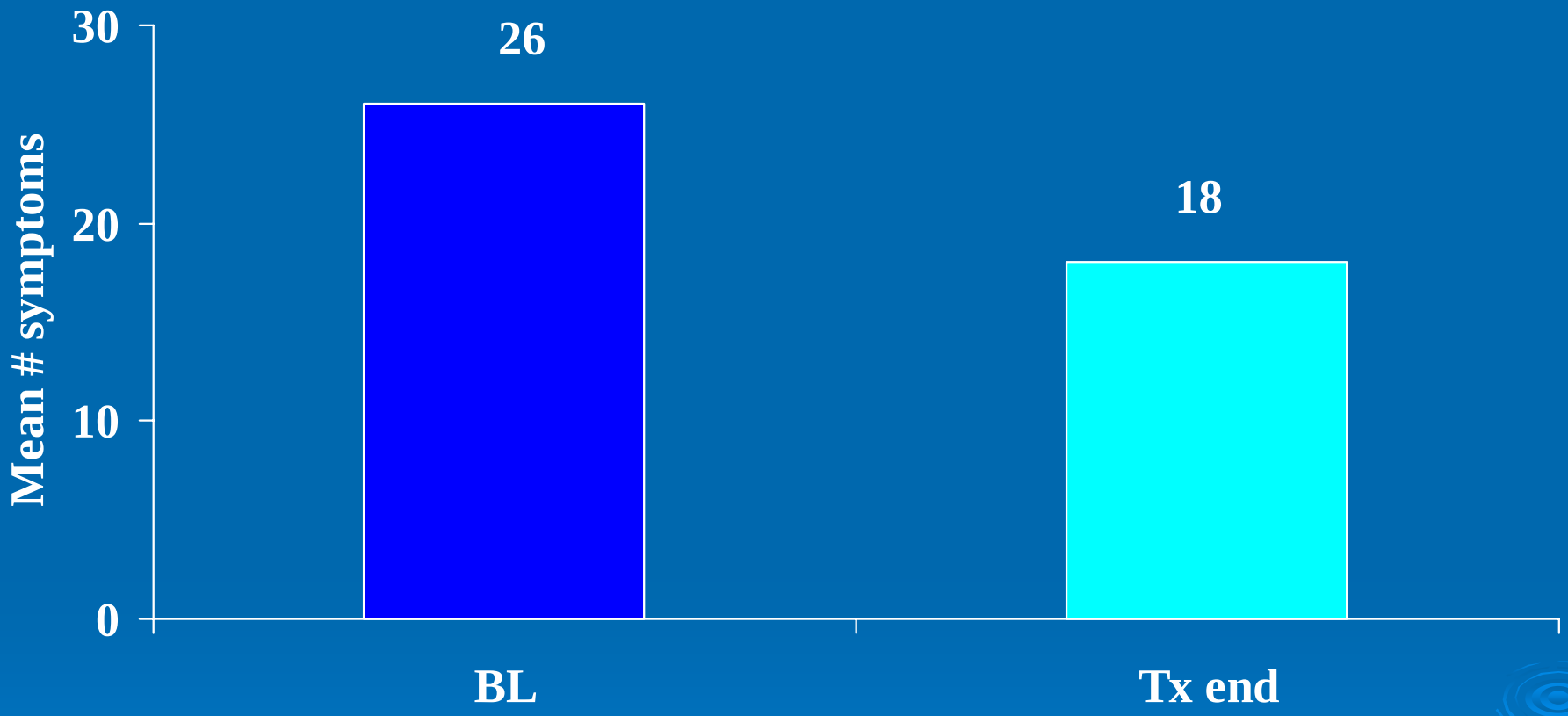
Possible is 0-30; t_{paired}=20.90; p-value<0.000 (highly sig.)

Beck Depression Inventory (BDI) Total Scores



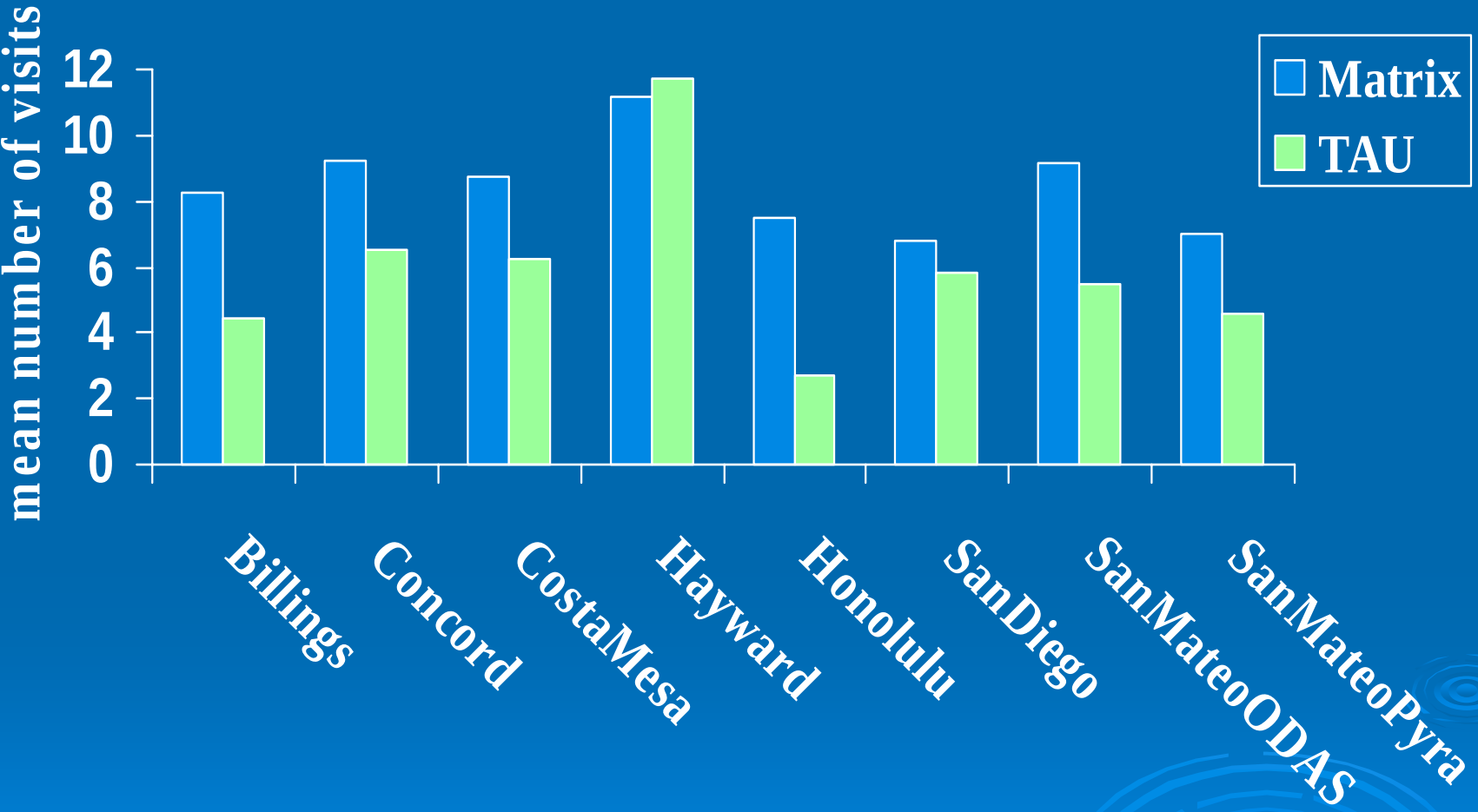
Possible is 0-63; t_{paired}=16.87; p-value<0.000 (highly sig.)

Positive Symptom Total (PST) from Brief Symptom Inventory (BSI)



Possible is 0-53; t_{paired}=14.33; *p*-value<0.000 (highly sig.)

Mean Number of Weeks in Treatment



Mean Number of UA's that were MA-free during treatment

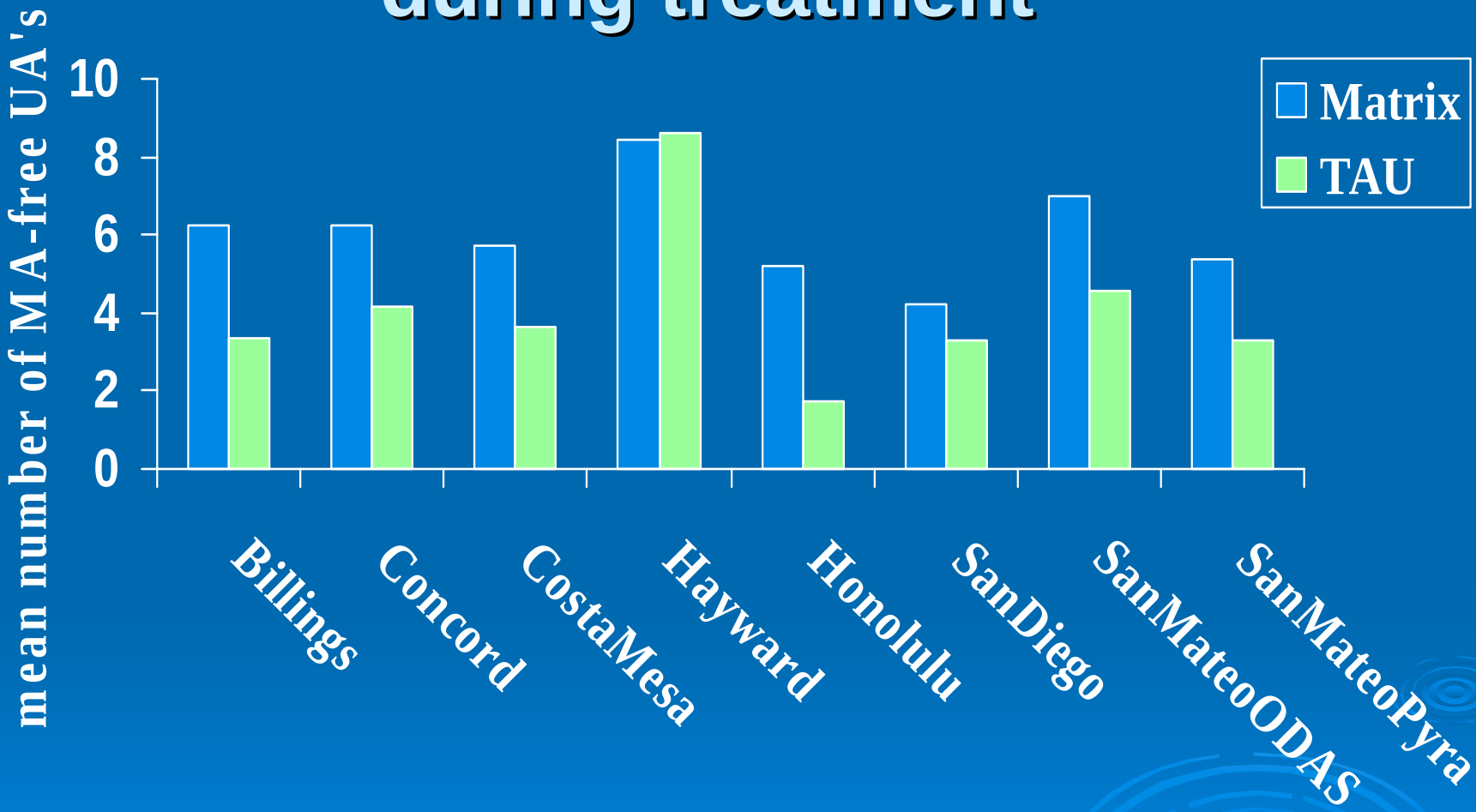


Figure 4. Percent completing treatment, by group

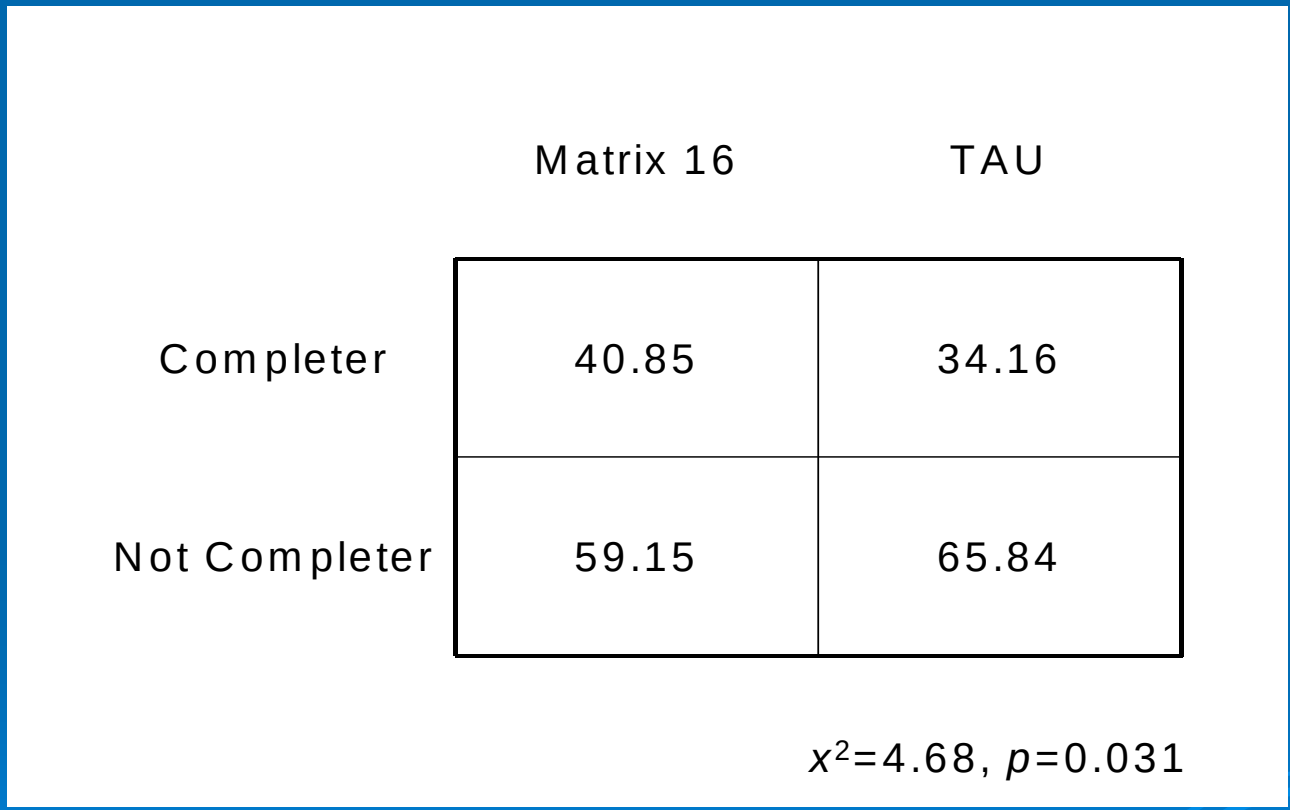


Figure 6. Participant self-report of MA use (number of days during the past 30) at enrollment, discharge, and 6-month follow-up, by treatment condition